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Percival M. Symonds

THIS IS ONE OF A SERIES OF PORTRAITS OF PSYCHOLOGISTS WHO HAVE CONTRIBUTED NOTABLY TO PROFESSIONAL PSYCHOLOGY

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JOURNAL OF CONSULTING PSYCHOLOGY

NORMATIVE DATA FOR CONSULTATIVE USE OF A MODIFIED ALPHA PROCEDURE[1]

BY FREDERIC L. WELLS AND BEATRICE M. SAVAGE

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SUMMARY

A further reorganization of the Army Alpha Test is described, embodying four subtests of verbal, four of number functions. Some refinements are offered, which become available when the procedure is used as an individual test, as is largely the case in the present work. Results are cited from various samples of superior adult populations. Secondary school norms are quoted from the Psychological Corporation, who publish the test. There is some discussion of the relation between the verbal and number scores, and the manner in which the scores are best represented.

THE main purpose of this paper is to present certain findings to increase the usefulness of an "alpha" procedure, in the higher intellectual ranges. Unless otherwise specified, all alpha test results here cited were obtained individually, as part of more general psychometric observation. For the individual study of upper quartile intellects, the various alpha procedures have been especially suitable. Whatever its function in group testing, it should be here unnecessary to emphasize that no one procedure today subsumed under the name of "test" gives a picture of intellectual organization which is adequate for purposes of educational, vocational or clinical counsel to the individual. In the verbal field for example, a test of the alpha type needs immediate supplementing by a good vocabulary range series, and something on the creative, "altitude" side, like the Rorschach test. The present studies aim at an alpha procedure better fitted to sustain its part in such a configuration.

A few paragraphs may be helpful for orientation. Many years ago, Thorndike laid down a classification of intellectual functions based on speed, range and altitude [8]. These terms are most serviceable from the standpoint of applied individual study. From the days of the first "personal equation," the speed of functioning has been in the foreground of psychological measurements of all kinds. Measurements of intellectual range are well illustrated in the conventional multiple-choice vocabulary tests. Direct measurements of mental altitude are of limited practicality through the multiple choice techniques ordinarily used in mental measurements; but there is enough common to the three functions, that tests well organized for speed and/or range, will serve in some sort as gauges of altitude. (A current use of

[1] From the Grant Study, Hygiene Department, Harvard University, Cambridge, Mass.

the term "power" in this connection, hardly preserves the distinctions here involved.) At upper levels the relationship breaks down badly, and to make inferences or postulates from multiple-choice tests about intellectual capacity in the sense of creativeness, originality, etc., is very ill-advised.

The common multiple-choice tests of intellectual processes use varying combinations of speed and range. For many purposes it is well to lay relative stress on speed, since range functions are more affected by opportunities of the environment. The archetype of such speed measurements is the "simple opposites" test, in which the examinee is given a familiar word that has a well-known opposite, and he is called on to reply with an opposite as quickly as he can. Such a test had a place in the Kuhlmann-Binet scale, 1922, [3] and its subsequent revision, 1938, [4]. Though applicable below the adolescent years, the chief relevance of these tests as speed measures is hardly reached till early adolescence. The material of the present study is young adults, centering around the 97th percentile of intellectual capacity. In relatively early adulthood the function begins to regress.

The United States Army used during the first World War the test commonly known as Army Alpha [12].[2] Its distinctive feature is organization by discrete subtests with relatively short time limits, up to five minutes. The tasks of each of the subtests are initially very easy and increase in "difficulty" well beyond the capacity of most persons to accomplish them, without limit of time. Speed is a conspicuous factor, and the procedure is sometimes loosely spoken of as a "speed" test; but it is clear that range and altitude factors are present, as in the synonyms-antonyms and arithmetical reasoning subtests. It is properly a speed test only insofar as the responses and means of deriving them are well known, and one is measuring the time of going through thinking steps that the examinee well understands.

Army Alpha was the first of the large scale procedures of its kind, and under the circumstances was rather hurriedly put together. It is not surprising that its components were somewhat out of balance, and have tended to remain so. The principal imbalance has been between verbal and quantitative (number, arithmetical) material in general. In the revision brought out by one of the writers in 1930, one step in correction was taken in replacing the cumbrous initial page of the original version with a simple addition procedure [10]. A written directions test also replaced the original (information) Subtest 8. The method concerned here embodies the further step of replacing the original "common sense" Subtest 3 with another largely computational subtest. This consists of thirty-two series of three two-place numbers, whose greatest common divisor is always 2, 3, 4, 6 or 7. The examinee writes as the answer, whichever digit is correct. Time limit is four minutes, score is half the number right (for parity with the subtest it replaced).

The present alpha series accordingly consists of four verbal and four number subtests: B, Same-Opposite; C, Directions; D, Verbal Analogies; G, Mixed Sentences; and four number subtests, A, Arithmetical Reasoning; E, Addition; F, Greatest Common Divisor; H, Number Series Completion. In present use they have been treated as two separate series, and not summated. They have been published in Forms 6 and 9 by the Psychological Corporation

[2] In the interest of accuracy the term "Army" should hardly be applied to the several revisions of this test and users should indicate any revision by its specific name or editor.

("Modified Alpha") [1].

The raw scores of the verbal subtests summate to 144 maximum, those of the number subtests to 68. For easier comparison with traditional alpha scores they may be, and here have been, multiplied by the constants 1.47 for the verbal series, 3.12 for the number.

As the technology of clinical testing develops, there comes to be less reliance upon global scores, based upon diversified subtests, as found in Army Alpha, or the Binet systems. The tendency is toward smaller test units, more analytically constituted, with less emphasis on their summation. This is embodied in Wechsler's paper, "Analytic Use of the Army Alpha Examination," and illustrated in the organization of the Bellevue Scale [9]. No adequate report on the Bellevue procedure omits the subtest scores. There is much to gain from such a development in the alpha procedure, for while it covers a narrower population range, it is better in the highest ranges, where its subtests are on the whole stronger than those of the Bellevue. Available data make it entirely convenient to adapt a standard score procedure as described by Wechsler, to the alpha for populations above the 75th percentile. Thus one might change letter grades as generally used in the present studies, into numerical ones as follows:

E	D−	D	D+	C−	C	C+
0	1	2	3	4	5	6

B−	B	B+	A−	A
7	8	9	10	11

The mean rating here is C, and the successive steps are each one quarter sigma away, except that any score within plus or minus one quarter sigma of the mean, rates as C. The rating applies to a measure which is "at least as good as" the score given for that letter grade, or standard score numeral, but less good than attaches to the next grade (illustrations below).[2] A use of numerals rather than letter grades may tempt to summation, but hardly forces it.

A further advantage of standard score procedure, whether by numeral or letter grades, is that alpha becomes no longer a closed system. There are other test devices suitable for incorporation, perhaps to the occasional exclusion of present ones. A specially good feature of test series organized like the Bellevue, or Detroit Learning Aptitude, or performance series generally, is that they permit a certain eclecticism in the use of subtests according to particular conditions. An organization as here described, permits any subtest that has ever been or may become a member of the alpha family to take its place beside the others whenever it is especially relevant, for example the "common sense" subtest in a pronouncedly schizoid picture.

In five local samples, means and sigmas on distributed scores for alpha verbal and alpha number have been observed as follows:

TABLE I

DISTRIBUTION OF MEANS AND SIGMAS FOR ALPHA VERBAL AND ALPHA NUMBER SCORES IN FIVE LOCAL SAMPLES

Group[1]		I N=62	II N=47	III N=74	IV N=50	V N=66
Total Verbal	M	171.1	176.7	169.5	188.0	181.1
(1.47)	σ	22.6	22.9	25.2	16.0	18.0
Total Number	M	154.0	148.4	150.5	170.7	158.6
(3.12)	σ	22.1	24.1	21.2	19.7	19.4

[1] Groups I, II, III are Hygiene Department referrals; Groups IV, V are Grant Study referrals, somewhat selected for good alpha.

The following table illustrates total alpha verbal and total alpha number standard scores for Group I above.

[2] The table cited by E. B. Greene is also applicable, but introduces greater precision than is here relevant [5, p. 60].

TABLE II

DISTRIBUTION OF TOTAL ALPHA VERBAL AND ALPHA NUMBER STANDARD SCORES FOR ONE LOCAL GROUP

Standard Score	Letter Grade	Verbal	Number
0	E	137.2	120.8
1	D−	142.8	126.4
2	D	148.5	131.9
3	D+	154.2	137.4
4	C−	159.8	143.0
5[1]	C	165.4	148.5
6	C+	176.8	159.5
7	B−	182.4	165.0
8	B	188.0	170.6
9	B+	193.7	176.1
10	A−	199.4	181.6
11	A	205.0	187.2

[1] The mean of the distribution is placed at the midpoint of the standard score scale, or 5.5, which provides a designation of the standard score of 5 to any score which falls within plus or minus one quarter sigma of the mean.

Standard scores are readily computed for total verbal and number scores from means and sigmas such as given above; and for subtests of the various groups as cited below.

TABLE III

STANDARD SCORES COMPUTED FOR TOTAL VERBAL AND NUMBER SCORES FROM MEANS AND SIGMAS FOR FIVE LOCAL GROUPS[1]

Group		I	II	III	IV	V
Subtest B	M	33.1	33.4	31.6	34.6	33.7
	σ	5.2	4.6	5.9	4.5	3.9
Subtest C	M	34.2	35.8	34.0	37.5	36.2
	σ	5.4	5.3	5.2	3.6	4.5
Subtest D	M	31.4	32.8	31.6	35.7	34.6
	σ	5.2	5.7	5.4	3.4	4.9
Subtest G	M	19.5	20.2	19.4	21.6	20.2
	σ	3.6	3.4	4.0	3.2	3.9
Subtest A	M	14.3	13.7	13.7	15.1	13.7
	σ	2.8	2.3	2.3	2.4	2.0
Subtest E	M	10.0	10.2	10.0	11.3	10.8
	σ	1.4	1.3	1.4	1.0	1.2
Subtest F	M	12.4	11.6	11.5	13.9	12.7
	σ	3.0	2.8	2.5	2.1	2.6
Subtest H	M	14.6	14.4	14.7	16.5	15.5
	σ	2.6	3.0	2.9	2.8	2.6

[1] Summations of these subtest means are not arithmetically commensurate with the total score means, and would differ from them somewhat.

The mean position in figures such as these clearly applies to only very specialized groups. On the other hand, it is hardly likely that sigmas would differ significantly in most college populations (for above total scores, 20-25 may be anticipated; for an unselected adult population, about 38; Greene [5], Macvaugh, [7]). It is naturally desirable to establish internal standards such as these, and there is no reason why serviceable approximations of such standard scores cannot be made quickly available for a wide range of populations in the upper quartile of mental development. In a corresponding group-tested series of nursing applicants (Group VI, $N = 120$) the means and sigmas of the distributed total scores and of the distributed subtest scores appear as follows:

TABLE IV

MEANS AND SIGMAS OF DISTRIBUTED TOTAL SCORES AND SUBTEST SCORES OF A GROUP OF NURSING APPLICANTS ($N = 120$)

	Mean	Sigma
Total Scores		
Verbal	122.0	27.8
Number	118.0	21.6
Verbal Subtest Scores		
Subtest B	19.0	5.9
" C	29.1	5.8
" D	21.2	8.4
" G	15.2	4.9
Number Subtest Scores		
Subtest A	9.3	1.8
" E	9.7	1.8
" F	7.4	2.6
" H	10.1	3.1

Interest attaches to comparison of the subtest features of this group with those of the liberal arts collegiate groups already cited. Thus the verbal and number functions are here closer together than they are in the liberal arts groups. This is true in spite of the nursing group being women, who have been often considered at a disadvantage in

quantitative functions as compared with verbal.

One may also compare in the two groups, Subtest B (Same-Opposite) and Subtest C (Directions). Cultural limitations have seriously affected the nursing group with Same-Opposite, left them not far below the liberal arts group in response to Directions. In like manner, the nursing group loses ground in three of the number subtests, but has substantial equality with the liberal arts group in the Additions subtest. It is becoming recognized, as here illustrated, that the limitations, cultural or inherent, of women with quantitative material, do not apply to the simpler computational functions where indeed the contrary may be the case.

In individual use, the examinee should be instructed to read the subtest directions, and advise the examiner when he is ready to begin, or of any explanation that may be needed. The time for understanding each subtest may be recorded, and makes a valuable datum to check against the score itself (speed of reading comprehension). These considerations do not apply to the Analogies and Number Series Completion subtests, which are in all cases to be explained orally by the examiner. With an interval timer, which should preferably be available, the individual test becomes largely self-administering.

Times in seconds for reading instructions of the subtests, together with the general average instruction time for verbal tests and for number tests are given in Tables V and VI. These figures concern Groups I-V above.

Distributions of the average instruction times for the three verbal tests, and three number tests, show the following means and sigmas:

TABLE V

TIMES IN SECONDS FOR READING INSTRUCTIONS IN A SERIES OF SUBTESTS

Group		I	II	III	IV	V
Subtest B	M	16.2	14.1	17.0	14.4	15.1
	σ	5.5	6.0	7.1	5.7	6.0
Subtest C	M	23.6	22.5	23.3	20.2	21.6
	σ	8.3	8.7	8.5	7.0	6.1
Subtest G	M	46.7	47.9	51.0	44.5	48.7
	σ	17.4	15.4	19.8	12.9	13.6
Subtest A	M	12.4	15.8	18.2	10.9	14.7
	σ	5.5	8.3	8.4	6.1	5.3
Subtest E	M	27.8	22.1	27.4	21.2	24.3
	σ	10.6	8.8	12.2	10.5	9.2
Subtest F	M	52.6	48.6	53.0	52.1	48.0
	σ	19.0	16.2	19.9	18.8	13.8

TABLE VI

DISTRIBUTION OF MEANS AND SIGMAS OF THE AVERAGE INSTRUCTION TIMES FOR THREE VERBAL AND THREE NUMBER TESTS

Verbal	M	28.9	27.7	30.5	26.4	28.4
Tests	σ	7.9	7.0	10.4	7.1	6.8
Number	M	30.6	28.0	32.0	28.2	28.5
Tests	σ	8.7	8.5	9.6	9.4	6.9

In a population of the present high-scoring level, a difficulty presents itself in the frequency with which subtests are completed within established time limits. The practical way to deal with this is as elsewhere described, namely, to add to the normal score the credits that would have been earned if the examinee had continued to earn credit at the same rate for the remainder of the normal working time [11]. In this manner extreme scores may spread indefinitely high, instead of concentrating around an alpha test's arbitrary limit; (Army, 212 points). In Table VII are distributions of representative material, comparing normal scores with scores speedweighted as above.

There is, and perhaps must always be, something of a gap between the constructs that emerge from advanced statistical analyses of mental measurements, and the categories that are most meaningful to intensive and applied observations. Thus Guilford [6], working

TABLE VII

DISTRIBUTION SHOWING COMPARISON BETWEEN NORMAL TOTAL ALPHA SCORES AND SPEED-WEIGHTED TOTAL ALPHA SCORES OF A REPRESENTATIVE LOCAL COLLEGE GROUP ($N = 77$)

	Normal Scores	Speedweighted Scores
150-159	1	1
160-169	9	6
170-179	15	13
180-189	24	11
190-199	20	13
200-209	8	13
210-219		7
220-229		3
230-239		0
240-249		1
250-259		2
260-269		0
270-279		0
280-289		2

with substantially the original Army Alpha, established a statistical basis for three factors to be termed V (verbal), R (reasoning) and A (arithmetical), which cut across such attributes as speed, range and altitude. From the present standpoint these will bear further breakdown. It has long been clinically apparent, as well as statistically shown, that disparity exists between reasoning aspects of arithmetical operations, and their computational ones. Reasoning functions themselves are distinguished as they deal with quantitative operations or with verbal ones. Towards an essentially computational task like addition, a number-series completion test stands in somewhat the same relation as do analogies to synonym-antonyms. And with individual cases the disparities in these functions can be so marked that global scores become highly unsatisfactory representations. The appropriateness of separating verbal and quantitative functions has been recognized for some years in the basic college aptitude tests of the American Council on Education and the College Entrance Examination Board. Further breakdown depends on scrutiny of particular subtests. How revealing even brief subtests like those of alpha can be in a large material, is well shown in the graph cited by Cobb and Yerkes comparing officers in several departments of military service (Infantry, Engineers, etc.) [2].

In the present data, the groups are somewhat selected for verbal or number mindedness. A liberal arts college group is selected for verbal mindedness and its higher verbal scores could be reasonably attributed to this. A small sample from a technical school shows a reverse situation, as follows:

TABLE VIII

COMPARISON OF VERBAL AND NUMBER DATA FROM A TECHNICAL SCHOOL GROUP ($N = 45$)

	Mean	Sigma
Total Verbal	154.0	20.9
Total Number	165.0	17.5

Data from another technical school which is reputed to give relative emphasis to cultural aspects of technology show relationships as follows:

TABLE IX

COMPARISON OF VERBAL AND NUMBER DATA FROM A TECHNICAL SCHOOL EMPHASIZING CULTURAL FACTORS ($N = 100$)

	Mean	Sigma
Total Verbal	168.0	22.2
Total Number	164.0	20.7

The group least selected for verbal or number mindedness as such, is probably the nurses' training group already mentioned. They show slightly higher verbal scores, in which sex does not clearly play a part. A reasonable equality of weighting the verbal and numerical se-

ries seems to be afforded. Marked disparity in a given individual is an item of proportionate clinical significance. For both verbal and number functions, however, one must keep the distinction between the more formal and the more rational aspects; as for example, same-opposites versus analogies, or addition versus number series completion.

Data of considerable relevance to the above have been issued by the Psychological Corporation in connection with their published form of this test [1]. (*Cf.* "Modified Alpha", above.) By their data, the test under discussion yields at least on high school groups, lower scores than the Army Alpha; how far this is a function of the examinees or the reorganized test, cannot be said at present. The verbal-number relationship is the feature of main interest. As the immediate data are organized, a convenient way of stating this is by the percentage which the number score is of the total score (number + verbal). The group means for this percentage figure, range

TABLE X

A COMPARISON OF VERBAL-NUMBER RELATIONSHIPS IN DATA FROM HIGH-SCHOOL GROUPS

	Boys and Girls		Boys			
Grade	7	8	9	10	11	12
N	129	127	1561	2126	1111	794
Verbal						
Mean	45.2	50.8	58.8	65.8	75.4	79.4
Sigma	16.9	16.8	19.2	20.6	20.9	19.2
Number						
Mean	28.4	30.0	33.5	35.1	39.6	40.7
Sigma	6.1	5.6	8.0	7.8	8.5	8.5
Total						
Mean	73.6	80.8	92.2	100.9	115.0	120.0
Sigma	22.5	26.0	23.5	24.7	27.3	26.0
$\left(\frac{\text{Number Score}}{\text{Total Score}}\right) \times 100$	38.6%	37.1%	36.3%	34.8%	34.4%	33.9%
			Girls			
Grade			9	10	11	12
N			1614	2123	1290	963
Verbal						
Mean			65.0	68.7	75.4	80.1
Sigma			18.9	20.0	20.7	18.5
Number						
Mean			33.1	33.9	36.2	37.4
Sigma			7.8	7.8	8.2	7.6
Total						
Mean			98.2	102.6	111.5	117.5
Sigma			23.2	26.5	26.6	26.6
$\left(\frac{\text{Number Score}}{\text{Total Score}}\right) \times 100$			33.7%	33.0%	32.4%	31.8%

between 38 (seventh grade) and 32 (senior high school girls), as shown in Table X. There is a consistent downward creep of this figure as the total score increases; i.e., the verbal score increases slightly faster than the number. It is roughly 2 per cent higher for the boys than for the girls, denoting a smaller sex difference between number and verbal functions than might have been looked for. (*Cf.* Group VI above.) A verbal lead of the girls at the beginning of high school is lost by the third year; a minimal number lead of the boys is somewhat increased. Means and sigmas for these groups are cited in Table X above.[4]

The above percentage which the number score is of the total score may prove a formula of some convenience in expressing a degree of number or verbal mindedness. Accordingly in Table XI the following means and sigmas are offered for a representative sample of the local liberal arts group (Group I, above), and a graduate group of more technological orientation (other than those above cited). The higher the figure, the higher the number score in proportion to the verbal.

TABLE XI

A Comparison of Number-Verbal Relationships Between a Liberal Arts and a Technological Group

(Liberal Arts $N = 62$; Technological $N = 235$)

	Liberal Arts (individually tested)	Technological (group-tested)
(Number Score/Total Score) × 100: Mean	30.7	31.4
(Number Score/Total Score) × 100: Sigma	2.7	4.0

The means show a continuation of the previous trend, for the number score to decrease in proportion to the verbal, as the total score rises. Sigmas for this figure are here unavailable for the precollege group.

[4] Courtesy of the Psychological Corporation.

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COMPARISON OF STANDARD AND WIDE-RANGE TESTING ON THE STANFORD-BINET

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SEVERAL workers in the mental testing field have suggested that wider-range testing on the Stanford-Binet might result in more accurate I.Q.'s than are obtained by the standard method of administration. It is argued that if the testing is stopped at a single basal level and a single all-failure level as the directions for the administration of the scale stipulate (7), some subjects may be given credit for items which they would not pass if actually administered, and some may lose credit on items which they could pass had they the opportunity to try them. Consequently it has been recommended by some examiners that the testing on the Stanford-Binet be extended down the scale until the point is found where the subject passes all of the items at two age levels and continued up the scale until he fails all items at two age levels. It is frequently overlooked that a departure from the procedure which was used in establishing the norms for the scale may invalidate the norms. Even if it were established that substantially different I.Q.'s were obtained by the two procedures, the wider-range testing would not be necessarily justified. Only the demonstration that this procedure results in more reliable I.Q.'s, more valid I.Q.'s, or I.Q.'s which have greater prognostic value will justify modifying the standard procedure. In the absence of such demonstration, data which are interpreted as indicating that the two procedures yield discrepant results cannot be used as evidence supporting the wider-range testing. On the other hand, data which show that the results from the two methods do not differ significantly constitute indirect evidence in favor of the standard method, since it is less time consuming. For this reason it seems worthwhile to report some results which were obtained in connection with a study in which the Revised Stanford-Binet Scale was used.

Whereas the previous studies which have compared results obtained by the standard procedure of administration with those from wide-range testing have been made with subjects who were either mentally retarded (1, 2, 3) or intellectually superior (4, 6), the subjects of the present study represented an unselected population with regard to intelligence. A sample of 126 subjects between the ages of eleven and fifteen was examined on Form L of the Revised Stanford-Binet Scale. For each subject the standard procedure of administration was first completed, and then the testing was continued up the scale until all items at two age levels were failed and continued down the scale until all items at two levels were passed. Results according to the standard procedure were then compared with results obtained from the extended testing. The data of this comparison will be considered in the following order: (1) failures below the first basal, (2) successes

above the first all-fail level, (3) changes in I.Q. resulting from the extended testing. It should be noted here that failures below the first basal and successes above the first all-fail level which were registered during the course of the standard administration of the scale are not included in the discussion of failures and successes.

TABLE I

DISTRIBUTION OF 126 SUBJECTS ON REVISED STANFORD-BINET SCALE, FORM L, FOR WHOM TWO BASALS WERE ESTABLISHED

Year Level of First Basal	Frequency of Subjects		
	Total	No Items Failed Below First Basal	One or More Failures Below First Basal
VI	2	2	
VII	6	6	
VIII	9	9	
IX	14	6	8
X	13	9	4
XI	14	9	5
XII	17	9	8
XIII	15	3	12
XIV	32	14	18
A.A.	2	2	
S.A.I	2		2
Total	126	69	57

Table I shows the distribution of the total 126 subjects according to the level at which the first basal was established and indicates the number who did not fail and who did fail items below their first basal. It will be noted that 69 subjects, or 55 per cent of the total group, had no failures below their first basal. Fifty-seven, or 45 per cent of the cases, failed one or more items below their first basal. The individual number of failures below the first basal made by these 57 subjects was as follows: 41 failed one item, 6 failed two, 7 failed three, 2 failed four, and 1 subject failed seven items. The corresponding number of months' credit lost was respectively: two, four, six, eight, and fourteen.

The data in Table I indicate that when age levels IX, XIII, and XIV were first established basals, over half of the subjects failed items below their first basals. Items which were failed below a first basal five or more times were: VIII-6, IX-6, XI-1, XII-3, XII-4, XIII-1 and XIII-6.

In considering successes above the first all-fail level those subjects who passed items at all levels up to the S.A.-III, or highest, level were eliminated from the group. This left 65 cases. Two all-fail levels were established for 59 of these subjects. For 1 of the other 6 the first all-fail level was at S.A.I and items were passed at the S.A.II and S.A.III levels, and in the other 5 cases the first all-fail level was established at S.A.II and items were passed at S.A.-III. In these 6 cases a hypothetical lev-

TABLE II

DISTRIBUTION OF 65 SUBJECTS ON REVISED STANFORD-BINET SCALE, FORM L, FOR WHOM TWO ALL-FAIL LEVELS WERE ESTABLISHED[1]

First All-Fail Year Level	Frequency of Subjects		
	Total	No Items Passed Above First All-Fail Level	One or More Passes Above First All-Fail Level
XI	1		1
XII	2	1	1
XIII	0		
XIV	2	2	
A.A.	21	14	7
S.A.I.	16	12	4
S.A.II	23	18	5
Total	65	47	18

[1] For 6 cases an all-fail level above the S.A.III level was assumed. See text.

el immediately above S.A.III was assumed to be the second all-fail level. Table II shows the distribution of these 65 cases according to the test year at which the first all-fail level was established and indicates the frequency of subjects who passed no items and who passed one or more items above this first all-fail level. It will be noted that 47 subjects, or 72 per cent of the total, did not pass any items above their first all-fail level. The distribution of the remaining 18 subjects with reference to the number of successes above the first all-fail level was as follows: 12 passed one item, 3 passed two, and 3 passed three items. The number of months' credit gained ranged from two to eighteen. Items which were passed above a first all-fail level five or more times were: S.A.I-2 and S.A.III-2.

Although nearly 50 per cent of the subjects for whom double basals were established failed items below their first basal, and nearly 30 per cent of the subjects with double all-fail levels passed items above their first all-fail level, the differences in I.Q.'s based on the standard and extended testing procedures were not significant. Extension of the testing in both an upward and downward direction resulted in some cancellation of gains and losses. The I.Q.'s of 25, or 39 per cent, of the 65 cases for whom both a double basal and a double all-fail level were established showed no change. The I.Q.'s of 17 subjects decreased by the following amounts: 2 by one point, 1 by two points, 7 by three points, 2 by four points, and 4 by six to eight points. Only the last 4 decreases exceeded the corresponding errors of measurement for the given age and I.Q. levels (5, p. 63). The ratios of the difference to the standard error of measurement for these 4 cases were respectively: 1.3, 1.6, 1.6, and 1.6. Critical ratios of 1.3 and 1.6 correspond to probabilities of .19 and .11 respectively. These values indicate that the obtained differences in I.Q. which exceeded the error of measurement would be found between I.Q.'s based on the two equivalent forms of the Stanford-Binet in eleven to nineteen times out of one hundred.

Twenty-three of the 65 subjects decreased in I.Q. by the following amounts: 12 by one point, 7 by two points, 1 by three points, and 3 by four points. None of these differences exceeded the corresponding errors of measurement.

The distributions of I.Q.'s based on the standard and wide-range testing procedures for the 65 cases were similar with like means and standard deviations (100 ± 16). The correlation between the two sets of data was .93, which is the same value as the median of the coefficients of reliability between Form L and Form M for ages six to thirteen reported by McNemar (5, p. 63).

Thirty-four of the 61 cases for whom a double basal was established but for whom a double all-fail level could not be established showed no change in I.Q. The 27 subjects who showed a change were distributed as follows: 18 decreased by one I.Q. point; 5 by two points; 1 each by three, four, five, and eight points. Only the latter 2 decreases were larger than the standard error of measurement. The critical ratios were 1.1 and 1.8 respectively which correspond to probabilities of .27 and .07. When the 61 subjects referred to here were added to the 65 subjects for whom both a double basal and a double all-fail level were established, the correlation between I.Q.'s based on the two procedures became .99, which is larger than any of the reported coefficients of reliability between the two forms of the scale (5).

The results reported above show that the standard and wide-range testing procedures for a group of unselected children between the ages of eleven and fifteen yielded I.Q.'s which were approximately as similar as those obtained on two equivalent forms of the Stanford-Binet. These data do not preclude the existence of more significant differences for special groups—for example, the feeble-minded or intellectually superior—or for other age levels, but they do indicate that when the general population of eleven- to fifteen-year-old children is examined, the two procedures produce nearly identical I.Q.'s. The question as to whether the wide-range testing procedure might give more accurate results does not exist as far as these data are concerned.

If differences which significantly exceed the error of measurement are demonstrated for other groups, it will be necessary to establish in addition that the I. Q.'s from the wide-range testing are more reliable, more valid, or have greater prognostic value before a modification of the standard procedure should be seriously considered.

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NONDIRECTIVE COUNSELING APPLIED TO A SINGLE INTERVIEW

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"EFFECTIVE counseling consists of a definitely structured, permissive relationship which allows the client to gain an understanding of himself to a degree which enables him to take positive steps in the light of his new orientation" (2). The interview technique developed by Rogers and his students for bringing about such relationships, is most often described as "nondirective" for the reason that authoritarian and persuasive approaches have been discarded, and because no satisfactory positive designation has yet been found to express in a word what the counselor does and what the client experiences. In using the term, therefore, it is important to recognize its descriptive limitations and to emphasize that this counseling procedure implies more than passive listening and mere "not directing". Rogers defines the therapist's function as "not to pass judgment, but to clarify and objectify the client's basic attitudes" (2). In order to do this, the counselor must work towards the skills involved in understanding what the client has tried to express, in verbal restatement or "recognition" of feeling in terms which the client can and will accept; and in control of the counselor's own impulse toward suggestion and premature interpretation. Even more fundamental is acceptance by the counselor of the client's right to self-determination, and belief in his capacity for constructive choice on the basis of insight rather than guidance.

Recent promising research (2, 4, 6, 7, 9) in the nondirective method of conducting treatment interviews, raises the question as to whether or not it can be applied to the single interview contact. An answer to this question is of considerable importance, since many psychological clinics are organized and conducted in such a way that they must depend upon one interview to accomplish their purposes. No matter how desirable it may be to follow diagnosis with extended treatment, such a program is impractical because of the numbers of persons seeking help, and the limitation of time and personnel.

As a partial answer, the following interview is reported without apology, in spite of the fact that the case is incomplete from the standpoint of end results. To measure the success of counseling in terms of what the client *does* about his problem is an extremely complex matter, involving the evaluation of uncontrolled factors outside the counseling relationship which may have been brought to bear upon decisions and outcomes. If the client "succeeds," counseling is not unequivocally entitled to credit; if he "fails," responsibility for that failure cannot be certainly fixed. On the other hand, if the counseling situation is regarded as an opportunity for the client

to arrive at new understanding and attitudes which will free him for more constructive attack upon his own problem, then interviews may profitably be examined for evidences of change in this direction.

In this report of an interview with a father, an attempt was made to apply some of the principles of nondirective counseling to a contact which had, in one sense, a directive purpose. The paradox is explained as follows: After an examination at the clinic, it was considered advisable for Betty A. to have intensive treatment by the child therapist at the Family Welfare, since the clinic (to which she had been referred by the school) does not handle cases requiring prolonged treatment. Since therapy is likely to be ineffective unless parents voluntarily seek assistance, parental cooperation was necessary. The school had sought to bring this about, but Mr. A. had become antagonistic. The school authorities were, however, able to induce him to come to the clinic for a report on tests given, and requested that this contact be used to bring about the recommended referral.

Obviously, certain suggestions had to be made, and certain explanations offered. It was felt, however, that further "sales talk" would meet resistance, and might create obstacles which would be difficult to overcome in the treatment process by another agency. It was decided, therefore, to keep suggestion and explanation at a minimum, to accept and recognize openly whatever resentment Mr. A. expressed, and to leave the decision up to him.

CASE BACKGROUND

Mr. A. is a janitor and he, rather than his wife, has assumed responsibility for discussing Betty's problem with the school. The mother had come to school once, complaining that she found the child "very hard to live with" and that she could find no method for getting her to do anything she should, such as dressing, eating, or going to school promptly. The parents gave their consent to have Betty called for at school and taken to the clinic, but neither accompanied her. Consequently little was known of her home background. Her third grade teacher complained of failure to learn, "silly" behavior, long irrelevant story telling, and isolation from other children except to annoy them by her peculiar talk and disturbing behavior. The clinic examination showed low normal intelligence, although her appearance and behavior gave a first impression of subnormality. She was extremely restless during the tests, scratched and squirmed continually, talked in an incoherent, disorganized manner, and laughed irrelevantly. The general impression was of a child withdrawn from reality and responding to inner rather than outer motivation. In the absence of physical findings by the school doctor to account for her symptoms, a diagnosis of possible beginning schizophrenia was made, and more extensive study and treatment were recommended.

Interview with Mr. A. (reported from notes taken during interview.)[1]

In response to a telephone call from the clinic, Mr. A. agreed to come in for a conference about Betty. He came in his working clothes, had a diffident manner of speaking (probably due to self-consciousness about several missing front teeth) and at first was markedly

[1] An analysis of selected comments by the client and the interviewer is published on p. 189 at the end of the interview. For convenience the statements in the interview are designated as I 1 (interviewer's first statement) C 1 (client's first statement), etc., and the same designations are used in the analytic notes.

defensive. His speech during the interview was not illiterate, he expressed himself well, and gave the impression of possessing at least average intelligence and education.

Rather hesitantly, Mr. A. accepted the interviewer's invitation to sit down.

I. Well, Mr. A., how can we be of assistance to you? I 1

C. Well, I don't know. I just would like to know what it's all about The school asked us to let her come here, and we said she could because we want to do all we can, but nothing happens. It's well, it's been quite awhile now since she came here. And then Miss Harris calls me this morning about this Family Welfare place, and we'd just like to know what it's all about. C 1

I. You feel that you should have had a report earlier. I 2

C. Well, it's been quite awhile. We've always tried to do everything we could for Betty, although, well, I never have had very much money—I'm a janitor—the trouble with her is she just hasn't had kids to play with. If she'd get in a bunch of kids they'd take it out of her and bring her round. C 2

I. You feel that is her chief trouble. I 3

C. Yes. Why, these report cards —we got one a little while ago and they said she was doing much better. When she was in second grade they said they wanted her to stay back because she was so small. I asked them if that was the only reason and they said, yes, she was up in her work, it was just she was so small. So we said all right. C 3

I. Well, Mr. A., I can understand how you feel. You sent her over here to get some help and you didn't hear from us. As a matter of fact, there has been a longer delay than usual, because I've been out of town. We've only just mailed the report to Miss Harris, but I called her last week because we weren't satisfied that we could solve the problem after seeing her just twice — we couldn't presume to do that . . I 4

C. No—I see. You couldn't. C 4

I. And so we suggested that someone ought to get to know her better and try to help her—that's why we suggested your seeing the Family Welfare. I 5

C. Of course, she's awful pokey. And she cries very easy. She cries when she don't understand something. Then, if you explain to her, she's laughing. It's the suddenest thing you ever saw. One minute tears, the next all smiles. C 5

I. Would you say that the things she cries about are natural from a child's point of view? If you were a child, could you imagine crying about them? I 6

C. She cries when you've got something—then she wants it too. Like the other night, we had company, had some ice cream sent in. And she woke up and wanted some but when we get her in and give it to her it's all right. She shows so plainly in her face just whatever she feels—she's a very excited little girl. She's smart enough . . C 6

I. Yes, she has normal intelligence. I 7
C. . . . but the thing is she doesn't have children to play with. They're either bigger or littler. When she's with the big ones she's afraid, but when she's with the little ones she wants to be boss. C 7
I. Would you say that she seems young for her age—not grown up emotionally? I 8
C. Yes, that's it. She acts younger. What did you find out about her? C 8
I. We found that her intelligence is normal, and when we find that, and we know that a child isn't getting along in school, and isn't making friends, we look for some other reason. As far as her behavior is concerned, from what the school told us and from the way she was here, it seemed to us that she is responding to a world of her own ideas, rather than to the real world around her. I 9
C. Wouldn't you say she is confused? C 9
I. Yes. Exactly. That's just what I meant to say. That's why we thought perhaps it would be best to get someone to help her. We work closely with the Family Welfare because we don't do that sort of work ourselves. But it's entirely up to you. Our only interest is to try to help if you think we can. I 10
C. She's awful pokey—awful pokey. You just can't get her going. Of course, maybe it's been our fault. It's been easier to do things for her than to teach her to do them. She hasn't enough to do. She ought to have more responsibility. C 10
I. That's a splendid idea. That could be very important, as you say. I 11
C. I told her mother to do that, but with a sink full of dishes and the table to set, it takes so long to get her to do anything. C 11
I. You feel you haven't given her a chance to learn? I 12
C. Yes. She gets an allowance, but the trouble is she spends it. And then it comes time to go to the show and she hasn't any. And I haven't the heart—I give it to her . . . (Pause) Of course, when I was a boy I didn't have any money at all—I had to earn everything. C 12
I. You think it would have been better if someone had given it to you? I 13
C. Well, it wouldn't have hurt. My parents could have . . I know I give in to her and she knows it, see? C 13
I. You feel she knows how to get around you. Is she closer to you than to her mother? I 14
C. Well, her mother's been working and she hasn't had much time. I was talking to a man in our building. His son when he was twelve years old, cried all the time and didn't have any friends and he sent him to camp and he came back just as different . . still, I don't know—he's still kind of standoffish—he doesn't mix in much. We've looked into these camps and we'd like to send her, but we haven't much money and gosh we couldn't afford it. Some of 'em cost as much for the summer as I make in a year. (Laughs). C 14
I. You feel it's very important for I 15

her to play with children. I believe that's what worries the teachers. It isn't just that her school work is behind. You say that has improved. But she doesn't get on with others.

C. No. But when she goes down with her cousins, she just pitches in. When she comes back she's exhausted She cries awful easy. I don't know. C 15

I. You find her trying at times, don't you. I 16

C. Well, she's awful pokey—awful pokey. C 16

I. That's why we felt you might like to get some help. I 17

C. I don't know anything about this Family Welfare. C 17

I. Well, they aren't just a charity organization giving out relief and baskets and things like that. They try to help people with problems of just this kind. But, of course, you can do as you think best. You feel she needs more responsibility and more to do, and you plan to give it to her. Perhaps you'd prefer to go along for a little while and then call on them if you decide you need some more help. It's entirely up to you. I 18

C. What would I do? Where are they? C 18

I. Well, what you would do is this: First you would go in and talk it over with Mrs. S., the director. That wouldn't mean you had decided to take Betty there. You could just see how you felt about it after talking it over. Then, if you wanted their help, probably they would ask you to bring Betty down to get acquainted with the person there who works with children. But you'd see about all that after you talked with Mrs. S. I 19

C. Well, I'd be willing. Where is it? C 19

I. (Supplies address) I 20

C. (Getting up) Well, I want to thank you. I don't know. I think your ideas of giving her more responsibility will help. C 20

I. It would, I think, but that was your suggestion, Mr. A., and I think it was a good one. You spoke of it and I agreed with you. I 21

C. Why — gosh — that's right. (Laughs) I guess I did say that. Well! (Pause). C 21

I. If we can be of any more help, Mr. A., let us know. And the Family Welfare is there, if you decide you want to talk with them. I 22

C. (Standing, shuffling hat in hand, hesitating, smiling). I kinda think tomorrow morning when she wakes up she's going to find she has some things to do! (Smiles) C 22

I. That's a good idea! I 23

C. Well, I want to thank you. I don't know — After talking it over — Maybe I'll go there — —well—I'll talk to my wife, and see. I've always let her go over to school—seems more the mother's place, but I had time today and this came up—well —thank you . . (Nods rather diffidently, but smilingly, and goes out). C 23

Analytic Notes[1]

I 2 This recognition of Mr. A.'s feeling of distrust and resentment was

[1] The writer is indebted to Carl R. Rogers for certain suggestions and comments which have been incorporated in the notes.

much more successful in establishing rapport than any attempt to defend school and clinic is likely to have been.

I 3 This response would have been better had it been more specific in summing up Mr. A's opinion. It might have been said thus: "You feel that your lack of money has made it hard for her to make friends."

I 4 Here the explanation is given, accompanied by recognition of Mr. A's right to feel as he does about it. This results in acceptance by the client in C 4.

I 5 This suggestion is premature, and Mr. A. ignores it. A pause would have been better.

C 5 Mr. A. evades the suggestion.

I 6 This question is frankly directive, and aimed at checking the hypothesis concerning Betty's apparent lack of emotional rapport. It brings out further description, but a summing up of what Mr. A. has just said would probably have been more productive.

I 7 This interruption was unnecessary and is ignored by Mr. A. It would have come better later on, when the information was asked.

I 8 Although this response appears directive, actually it recognizes what Mr. A has been saying, hence it gains quick acceptance in C 8.

C 9 This is an interesting insight on the part of Mr. A., and marks the beginning of his attempt to analyze rather than describe the problem.

I 10 The suggestion is made a second time, and is evaded by the same pattern as in C 5.

C 11 Begins with an evasion as in C 5, but goes on to a second important insight, and begins to assume responsibility for making a plan.

C 12 Mr. A. begins to sense relation between his own treatment as a child and his ways of handling Betty.

I 14 The first sentence is an adequate recognition. The question might have been unnecessary if the interview had not been hurried. No doubt this relationship would have come out without probing. Mr. A. answers it and then reverts to his earlier solution of Betty's problem, backing away from insights just acquired. (The latter is a typical phase of the therapeutic process).

C 15 Mr. A. rejects this attempt to bring the interview back to its purpose, and defends Betty momentarily. Then he returns to description of her symptoms and ends in confusion, "I don't know."

C 17 This is the first indication that Mr. A. is willing to explore the possibility of using help.

I 18 The description of the family agency was made as brief as possible and an effort was made to answer the questions most commonly asked. The latter part of this response raises the question as to whether it was advisable to make the suggestion that he might like to wait awhile before contacting the Family Welfare. It is undoubtedly a recognition of feeling, though not feeling which has been verbally expressed. The usual client is so sure he will be coerced that there is value in clearly indicating that he may wish to do nothing.

C 20 Mr. A. is not quite ready to accept responsibility for his own ideas about Betty, but when response I 21 turns it back to him, he seems surprised and also pleased in C 21.

C 22 Freed by a dawning conscious-

ness of his own capacity to understand his child, Mr. A. is able to voice a plan for different treatment.

I 23 This is, perhaps, too open approval. It may have tended to frighten Mr. A. back into a more confused position, indicated by his closing statement. A better response would have been: "You're really feeling there are things you can do about it."

SUMMARY

Objectives:

1. to establish rapport with the clinic by allowing him free expression of his feelings and attitudes.
2. to pave the way for a voluntary application to another agency for further help.

Techniques:

1. Permissive attitude on the part of the interviewer, with little probing for information not spontaneously offered, and with questions used sparingly to clarify leads expressed by client.
2. Interpretations limited almost entirely to summing up the client's verbally expressed viewpoint.
3. Information from interviewer confined to a minimum report on the clinic findings and a brief description of the agency to which he is being referred.

Results:

1. The client's antagonism dissolved almost immediately when it was accepted as reasonable.
3. Information was brought out about Betty's handling at home which may point to a more hopeful diagnosis of her behavior than previous observation suggested; that is, it may be in part the result of an environmental situation which can be modified to some extent.
3. The client himself brought out several suggestions concerning his daughter which might prove therapeutic — for example, giving her more opportunities to take responsibility, accepting the interpretation that she is emotionally immature—"young for her age"—and the client's own definition that she is "confused."
4. The client voluntarily asked for the address of the agency from whom treatment was available, and expressed willingness to consult the agency. Although he did not commit himself definitely, he left, apparently, more willing to follow through than he was before the interview. He also showed evidence of new insight and an intention to modify his own approach to the child.
5. Five weeks after the interview, Mr. A. had not made application at the agency to which he was referred.

Certain speculations on the final outcome of this interview immediately arise. Is the fact that Mr. A. appeared to arrive at new insight during the interview to be regarded as a benefit, or, since he probably cannot solve the problem without further assistance, is this growth toward self-reliance a liability in that it delays treatment? On the other hand, does this danger of delaying treatment (on what may prove to be a serious personality disorder) outweigh the danger which would have arisen if pressure methods had been used? In other words, which is the greater risk, a delay which leaves open the road to help, or a grudging acceptance which blocks it?

It seems extremely doubtful whether growth toward insight can ever be regarded as a liability, or that action instigated from without is ever more effective than in the case of the proverbial horse lead to water. Even evidence that Mr. A. did go to an agency, and that his child benefitted, would not settle these matters. They lead back inevitably to the distinction between evaluation in terms of outcome and evaluation in terms of progress. In judging this contact, therefore, the main concern must remain whether or not the single counseling session did show evidence of bringing about change in attitude in the direction of understanding and positive action.

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UNFOUNDED OBJECTIONS TO HIRING THE HANDICAPPED

By GEORGE LAVOS
MICHIGAN SCHOOL FOR THE DEAF

WHEN a placement agent sets out to find a job for a physically handicapped person,[1] he encounters certain objections. Employers often refuse jobs on bases other than proved incompetence in the job-duties or curtailment of jobs. There seems to be an element of discrimination against the disabled. An analysis of the objections, especially in these times of need for increased manpower and utmost utilization of workers, is an instructive and stimulating sidelight in personnel psychology. The words and behavior of employers, when approached by a placement agent seeking to place a handicapped person, show traces of certain traits which personnel workers, whether in public employment offices, vocational adjustment bureaus, industrial personnel offices, or guidance clinics, would find helpful to understand. While it is true that the disabled are a small percentage of the total population, it is also true that they appear frequently in personnel agencies because of their defects.

Today objections to hiring handicapped are on the wane: because of the great need for workers, the defectives are being given a chance to prove their worth. This analysis is yet worthwhile because of the employers who still object to hiring them and the program of postwar vocational adjustment for the handicapped which will have to take into account the war-disabled, the accident-disabled,[2] and the disease- disabled.

There are a great number of objections which employers raise. While these objections vary, they can be grouped under certain fundamental headings. The objections will be given, grouped, and then analyzed in terms of psychology. No attempt is being made to refute the objections; although, insofar as is possible, erroneous thinking will be indicated.

SOURCES OF THE DATA

The objections to hiring the handicapped applicant were taken from studies and reports of placement agents. These reports were written by different agents in widely scattered parts of the United States. Among the sections are New York, Illinois, California, the District of Columbia, and Minnesota. In time the reports were written from 1928 to 1941. Some of the objections were reported as a by-product of research studies on occupational analyses for the handicapped and others were reported when agents attempted to place handicapped persons.

OBJECTIONS TO EMPLOYMENT OF THE DISABLED

Objections to hiring handicapped are many. It is claimed that the presence of the disabled worker has an adverse

[1] The seriously disabled are meant; such as, the blind, the deaf, and partially sighted, the hard of hearing, the crippled, or the arrested tuberculous.

[2] Industrial accident figures rise in periods of war because of the increased tempo of work and the greater number of (relatively inexperienced and untrained) workers.

effect on production. It is claimed that the defect directly lessens the work-efficiency of the disabled employee and thus his volume of output is reduced. In a study of employment opportunities in Minneapolis, for example, a record was kept of the objections of employers. One of the most frequently mentioned objections was that the disabled would raise the unit cost of production since a disabled person cannot produce as much as others (7: p. 51). This has been reported elsewhere (8: p. 43; 4: p. 29; 1: p. 214). Another instance of this same objection is the protest of fellow-workers upon the hiring of a disabled person. It is claimed that the disabled worker, inasmuch as he produces less, will reduce the wage of the group as a whole when the wage is dependent upon what the group produces (9: p. 106). The opinion is also maintained that production is slowed down not only by the interference of the defect with production but also by ill health, weaknesses, lack of physical stamina, etc., on the part of the disabled. The handicapped cannot stand the pace; they cannot stand up under hard work because they are in poor health; they cannot work regular hours because they are weak. These are some of the forms this objection also takes (2: p. 9; 14: p. 23; 10: p. 20; 4: p. 40).

Another objection is the claim that the range of work opportunities open to the disabled is too limited. It is claimed that the presence of a defect limits the vocational versatility of disabled workers. Employers claim that the defect does prevent shifts to other jobs, although it may not interfere with a given job for which the person has been trained. Thus the disabled worker cannot be shifted about to meet the demands of production (4: p. 39; 14: p. 23; 10: p. 20; 9: p. 106). It is claimed, also in the same vein, that the presence of the defect is a bar to promotion because jobs higher up in the promotional scheme may require the use of the organ which is disabled (2: p. 9).

Another group of objections centers around the accident risk involved in employing handicapped workers. It is maintained that a disabled worker is liable to accidents and consequent injury to himself or others on the job because of his defect (7: p. 50; 8: p. 44; 2: p. 9; 14: p. 21; 10: p. 20; 4: p. 29). It is also stated that the presence of disabled would be an additional risk in cases of emergencies; such as fires and panics (4: p. 39). Such risks would affect insurance rates as well as increase compensation costs.

It is claimed that the disabled are absent a great deal and not punctual in reporting for work on time (14: p. 23; 10: p. 20).

Other objections have been mentioned. It is often maintained by an employer that his experience with the handicapped has been unsatisfactory and so he does not wish to employ others (4: p. 39). Employers also object to hiring the disabled because they fear that the disabled person will impose upon their sympathies and demand special considerations (4: p. 39). The employer sometimes states that he feels that pity may incline him to demand less of the disabled person and so reduce the morale of other workers in the shop (4: p. 39; 14: p. 25). On the other hand, some employers state that fellow-workers do not like handicapped people (14: p. 24). Other employers state that they "just don't like to have cripples around" (10: p. 21). And then there are employers who "seldom tell the reasons for refusing to give the crippled a job" (16: p. 73).

In summary, then, employment for

the physically disabled worker is refused because of (1) increased accident risk to self and others; (2) lessened productivity (*a*) due to interference of the disability in the performance of the job and (*b*) due to the absences and lower-than-normal physical stamina; (3) limited versatility in carrying on different kinds of work because of the defect; (4) increased insurance risks (*a*) because of ill health and (*b*) because of the accident-proneness of the disabled; (5) increased compensation costs because of the demand that the combined effects of two or more injuries be compensated; (6) past experience with the handicapped has proved them unsatisfactory workers and so all disabled applicants will prove unsatisfactory on the job; (7) fear that the employer will show undue consideration and concern for the disabled worker and so reduce shop morale; and (9) active dislike for the presence of a deformity or other visible defect.

DISCUSSION

The recitation of these objections almost makes the psychological mechanisms self-evident. The objections show traces of popular misconceptions, oversolicitude, fears of "spoiled child," and other reactions. These reactions may arise from several sources.

Society itself has had definite attitudes toward its handicapped members throughout history. The present attitude is in a stage transitional between amelioration and full acceptance of the handicapped as useful members of society. From available evidence society once actively rejected its defective members by killing them; then, in time, it began to tolerate their presence. The handicapped then received custodial or "refuge" care. Within recent years definite programs of amelioration of their physical, educational, and economic plights have been undertaken. Today with the emphasis on employment of all available manpower in the national defense effort the stage is being set for full utilization of the handicapped.

Employers are, in their thinking and reacting to the suggestion of placing a handicapped worker in their company, in all stages of this shift in attitude. Some actively reject the handicapped with a blunt "No, not interested"; some soften the refusal by an excuse. Some say that they contribute to charity (hence to "custodial" care) and so there is no need to hire the handicapped. Some say that they hire those disabled in their own employ but not outsiders. And, finally, some say that they have a place for such a worker.

Rejection and Oversolicitude

Probably basic to most objections is the simple aversion to a person with a defect, based possibly in remnants of society's old attitude, possibly in a fundamental psychological dislike of asymmetry and of the non-empathic qualities of a deformity, and possibly in a fear of being associated with an evil spirit and so becoming deformed one's self.[3]

This aversion is common to employers, fellow-workers, and the public. In placement work it takes such forms as "No, a definite no," "Not interested," "We have no place for them."

Along with a clearly stated refusal, there is fear of oversolicitude. The employer feels that he will become oversolicitous. Pity, especially maudlin pity, may cause the employer to feel that he will allow the handicapped person to exploit his defect to the demoralization of the fellow-workers. In some instances customers feel that too much is being

[3] In the middle ages defects were believed to be the results of visitations of evil spirits.

asked of the handicapped worker as he performs his job and protest to the employer of "exploitation." Placement agents usually seeks jobs for the handicapped in which there is a limited amount of public contact in order to avoid this.

Rationalization

Since the employer is approached by a rational argument to hire handicapped and because our society stresses reasons and facts, many empoyers counter the proposal with rational arguments against hiring them. An employer may raise questions of insurance rates or workmen's compensation difficulties. He may say that the workmen's compensation insurance companies prohibit employment of handicapped because their accident rate is higher than normal. The only available study, on the contrary, shows that the accident rate of handicapped is lower than the rate of matched normal individuals (6). He may state that workmen's compensation laws prohibit their employment. He may state that group life insurance policies in force in his plant prohibit his hiring "excessive" risks. Research does not show that compensation laws or compensation insurance companies prohibit employment of handicapped. Research does show, however, certain difficulties inherent in the laws of certain states and certain factors involved in "experience rating" for group life and compensation insurance.[4] These difficulties arise from the laws and the administration of the insurance programs and not from the handicapped. These isolated and fairly infrequent instances of possible real difficulties are sometimes enlarged to apply to all cases of handicapped in all jobs in industry.

There are other instances of attempts to refute by arguments the claim that handicapped workers are satisfactory workers. The claims that the handicapped produce less, that they are absent for illness more often are not substantiated by studies. The only available study inclines us to believe just the opposite (6).

The industrial physical examination is used for the purpose of selecting applicants with a high degree of freedom from physical defects without reference to the needs of the job. All must meet a set standard, usually high, even though the physical demands of the job may be only 75 per cent of the standard. A considerable tolerance is required. In short, the examination is not designed to help fit the worker to a job but to eliminate him.

"Types"

In some instances the employer has had previous experience with handicapped. Some time in the past he may have hired a deaf person. He found him unsuitable, possibly inefficient, possibly insubordinate. Therefore, all deaf are inefficient, insubordinate. One crippled worker failed at the job; therefore, all will fail. One arrested tuberculous worker broke down while engaged on the job; hence, all will break down. The characteristics of a member of a group are projected upon all members without differentiation. No study is made of the reasons why the failure occurred or the trait displayed itself. Association is turned into causation and liability imputed to all who have a similar defect.

Another basis for the blanket refusal is the employer's understanding of the terms crippled, deaf, etc. To him they may mean the most severely handi-

[4] Workmen's compensation laws and group life insurance as well as workmen's compensation insurance are technical in nature. They cannot be discussed here. (See references 11, 12, and 13.)

capped persons; the word "blind" may mean a very pathetic person always groping his way and talking aimlessly in a loud voice; the word "cripple" may signify a double crutch and leg-brace case almost unable to move about; the word "tuberculous" brings to mind a very cadaverous-looking person. The extreme cases, apparently unemployable, become the patterns for all cases. The type built up in the public mind by beggars and charity appeals becomes the only kind possible. The principle of individual differences *in the way a defect affects the body and personality is forgotten.*

Popular Misconceptions

Certain common thoughts about the handicapped are also barriers to their being hired. Many people are deceived by the appearance of the handicapped. An appearance of helplessness is thought to be an index of true helplessness. A blind person who cannot travel without a guide can still work at an assembly line as an inspector of surface irregularities inside a cylinder. A severely deformed hunchback can still operate a machine in a factory. A legless man in a cart can still sit on a bench and work.

Prejudging the functional possibilities from the structural defects leads to false conclusions. The handicapped are not handicapped in all avenues of activity. The blind are only sightless; their mentality can be good; their hearing, excellent. The person with an amputated leg can still use his arms. Every vocational counselor with the handicapped studies the organs that are still functional in relation to the person's interests, his abilities, and the local job opportunities. He does not base his guidance solely on the missing organs. The cart is put after the horse. Popular thinking has yet to follow suit.

Judging from structural defects alone is erroneous on several bases. First, in a way, it ties up with graphology, phrenology, and similar techniques of analyzing an individual on a superficial basis. It also ignores organic compensation and greater use of remaining limbs or senses which maintain functional possibilities often to a usable degree.[5] A partially paralyzed arm can still be used. In schools for the deaf and the blind the terms "usuable hearing" and "usable sight" are in common usage. Hence it is possible for a handicapped person to work at an occupation which may even involve the defective member.

Another misconception lies in deducing that, because a person is physically defective, his general health is poor and he will be absent from work more frequently. This belief ignores the fact that defects arise from a variety of causes; such as, congenital defects, public accidents, industrial accidents, epidemics of disease as well as low resistance of young children to disease. There are no morbidity studies of the handicapped available.

CONCLUSIONS

Examination of the reports made by placement agents of the handicapped applicant in widely scattered sections of the United States reveal that objections to the hiring of a disabled person are commonly made without regard to his true capabilities on the job. Historically, society has always rejected the handicapped person to some degree. Many of the objections raised by employers today appear to be based more on personal aversions and erroneous thinking than on evidence of the handicapped

[5] For instance, the blind perceive obstacles in their path chiefly by audition (5). The arms of a leg-disabled person become strong through the use of such appliances as a cane or crutch.

person's employability.

This paper is not at attempt to refute the objections raised to hiring the handicapped. It is a plea to study the individual who happens to have, along with other characteristics, a physical defect before arriving at decisions which preclude him from employment. It is a plea to those trained to analyze the individual to assist in the interpretation of the handicapped to the public, especially the employing public. Studies in the vocational abilities of the disabled, in the development of personality among handicapped, in employers' experiences with handicapped, in employers' attitudes toward the disabled, in the attitudes of handicapped persons toward the defect and toward society will all lead to truer understanding. Thus far the number of studies of the handicapped is few and limited to one or two of the groups of handicapped.[6]

As the war continues the toll of serious physically disabled will increase and the demands for workers will increase. Consulting psychologists, vocational counselors, employment interviewers, and placement secretaries will be able, more and more frequently, to present the qualifications of the disabled to prospective employers. The few overworked agencies which place handicapped cannot and need not handle all placement for the disabled. With an orientation which emphasizes analyses of the abilities and disabilities of individuals and with a knowledge of some of the kinds of thinking with which employers have answered appeals for jobs for handicapped, personnel workers will be able to help the handicapped help themselves to jobs.

[6] A recent text on the psychology of the physically handicapped shows that few studies of the handicapped are available. In this text, consisting of approximately 400 pages, only 150 are given over to summaries and interpretations of studies on the disabled as defined for this paper. Compared with the volumes of psychological data, the dearth of material concerning the handicapped is outstanding (15).

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REPORT OF AUDITING COMMITTEE OF THE AMERICAN ASSOCIATION FOR APPLIED PSYCHOLOGY, INC.

STATEMENT OF INCOME AND DISBURSEMENTS, DECEMBER, 31, 1942

Income

Miscellaneous (Taken over from Dunlap)	$2,330.84	
Application Fees	215.00	
Dues Past Due	86.00	
Current Year Dues	1,548.00	
Dues Paid in Advance	6.00	
Directory Sales	13.20	
		$4,199.04

Disbursements

Secretary's Office	$1,047.42	
Treasurer's Office	160.33	
Directory Sinking Fund	56.25	
Board of Affiliates	30.23	
Board of Affiliates (1943)	15.00	
Clinical Section	30.75	
Consulting Section	16.27	
Educational Section	28.38	
Industrial Section	14.59	
Program Committee	133.01	
Committee on Clinical Listings	50.00	
Reprints	8.50	
Committee on Psychological Development of Children	2.75	
Committee on Standards and Programs	15.00	
Miscellaneous	26.20	
		1,634.68
Net gain		$2,564.36

JOURNAL OF CONSULTING PSYCHOLOGY[1]

Income	$ 611.50	
Disbursements	1,431.12	
Net loss		—819.62
Total gain as of December 31, 1942		$1,744.74

[1] The Business and Circulation Manager, Dr. Jerry W. Carter, Jr., states that the income for the JOURNAL shown in this statement does not take into account any credit accruing to the JOURNAL from A.A.A.P. memberships.—Editor.

AMERICAN ASSOCIATION FOR APPLIED PSYCHOLOGY, DECEMBER 31, 1942

Assets

First National Bank of Hartford	$3,662.24	
Cash on hand	14.00	
		$3,676.24

Liabilities

Surplus December 31, 1941	$1,931.50	
Net Gain 1942	1,744.74	
		$3,676.24

This is to report that the Auditing Committee appointed by President Loutitt examined the books of the Treasurer of the American Association for Applied Psychology, Inc. It was our finding that the Financial Statement of December 31, 1942, copy enclosed, presents a true account of the funds of the Association.

The Committee also read a report of an audit made January 1, 1943 by Mr. L. R. Lawrence, accountant of Hartford, Connecticut, which indicated that the books of the Association were in a satisfactory condition.

Respectfully submitted,

ROBERT H. MATHEWSON
ELMER R. HAGMAN
Chairman, Auditing Committee

EDWIN BURKET TWITMYER, 1873-1943

EDWIN Burket Twitmyer, professor of psychology and director of the Psychological Laboratory and Clinic at the University of Pennsylvania, died in Philadelphia, after a brief illness, on March 3, 1943 in his 70th year. It was quite typical of his professional life that less than a week before his death he should have been actively engaged in *his* Speech Clinic among his colleagues, students, old and new cases.

Graduated from Lafayette College in 1896, he was appointed instructor in psychology at the University of Pennsylvania the following year, and continued a member of the faculty of that institution for nearly forty-six years. He received his Ph.D. at Pennsylvania in 1902, was made assistant professor in 1907 and professor in 1914. He was made assistant director of the Psychological Laboratory and Clinic in 1918, and director in 1937 upon the retirement of Lightner Witmer.

Twitmyer's doctoral dissertation *A Study of the Knee Jerk* reported observations on human beings which were coincident in time with the observations of Pavlov and Beckterev on animals. Not fully aware of the significance of these facts and discouraged by the lack of interest in the problems involved he turned from suggested research in this field to give his attention to the development of psychological apparatus. His genius in this activity has been reflected in the work of his students and in his own experimental techniques. And at the same time he relieved Witmer of the many tedious details in the development of the Witmer Cylinders, the Witmer Formboard and the adaptation of many tests and techniques for clinical use.

Twitmyer was the first of a long line of clinicians who came under the influence of Witmer's uncanny power to choose men and women who would later carry the clinical viewpoint to specialization in some particular area of human behavior. Twitmyer gave his greatest effort to the field of speech diagnosis and correction. In 1914 a special Speech Clinic was established and he continued until his death as chief of this clinic.

His point of view toward the problem of speech defects, their diagnosis and correction, is found in the book *Correction of Defective Speech*,[1] published in collaboration with Y. S. Nathanson. His observations convinced him that disturbances of normal rhythm of breathing were the nearest approach to a common etiological factor among the great variety of organic and psychological correlates of speech disorder. His corrective techniques therefore turned toward the breaking up of bad breathing habits and the establishment of new and correct ones.

Twitmyer was an accomplished public lecturer and did much to popularize both psychology as a science and its application through the clinical approach. His advice was sought in the development of state certification programs for School Psychologists and Special Class Teachers. He was the psychological representatives on the boards of trus-

[1] Philadelphia: Blakiston, 1932.

tees of a number of institutions caring for children. He carried the burden of the executive head of the Department of Psychology at Pennsylvania for nearly thirty years, and it was under his wise direction that the Department underwent an enormous expansion of teaching staff, student body, academic courses, clinical research and service. He likewise served continually on many general university committees and contributed greatly to the formulation of university policy through continued emphasis upon the individual point of view in personnel relationships and problems. Few members of a large university faculty would be so genuinely missed by his colleagues, administrators and student body alike.

Twitmyer seldom attended the meetings of the numerous psychological associations to which he belonged, and he seemed best known to many through the excellent work done by his former students and the affectionate manner in which they referred to him. He was one of the founders of the Pennsylvania Association of Clinical Psychologists, and felt greatly honored by them when elected their president in 1940. Here he felt most at home, almost completely surrounded by his colleagues and former students who knew him as teacher and friend.

ROBERT A. BROTEMARKLE
UNIVERSITY OF PENNSYLVANIA

ELIZABETH EVANS LORD, 1890-1943

DR. Elizabeth Evans Lord died January 10, 1943 in Boston. She was one of the finest representatives of clinical psychology. She was among the first to accept the challenge to translate the advances of psychological research into everyday language and to help parents, educators and related professions to make use of this knowledge in their daily work.

Dr. Lord was one of the founders of the Massachusetts Society of Clinical Psychologists, and as its second president, and subsequently as a member of the Board of Directors, ably served the interests of the society. She was a member of the American Association for Applied Psychology and of the American Psychological Association.

After graduating from Bryn Mawr College in 1914, she took a Master of Arts degree at Radcliffe in 1918. Following some eight or nine years of research and clinical psychological work in the Juvenile Court in Chicago, and the Yale Psychoclinic, Yale University, she completed her academic work and was awarded the degree of Doctor of Philosophy with high honors by Yale University in 1929.

Her work at Yale laid the foundations for her later work at the Children's Hospital in Boston, where she was appointed psychologist in 1929 under the direction of Dr. Bronson Crothers. She was also research associate in pediatrics at the Harvard Medical School. Dr. Lord was Dr. Arnold Gesell's assistant in research when he was compiling the material for a book *Mental Growth of the Pre-School Child.*

While working in Boston, Dr. Lord published many articles in scientific journals describing various aspects of her work with children. She wrote, with Bronson Crothers, for the American Pediatric Society, a paper on various aspects of recovery after damage to the central nervous system. For the last year or two she was particularly interested in lead poisoning and she prepared with Dr. Randolph Byers, a report on this subject which will be published during the next year. In addition, Dr. Lord has worked with various tests. A paper, "Diagnostic Values in A Visuo-Motor Test," was published by Dr. Lord and Miss Louise Wood of the Judge Baker Guidance Clinic. In 1937 the Commonwealth Fund published her book, *Children Handicapped by Cerebral Palsy; Psychological Factors in Management.*

Dr. Lord was well fitted for her profession. Her scientific acumen was coupled with great feeling for people. Many parents and teachers brought their anxieties to her and were helped by her wisdom and insight. She worked not with "cases" but with people. Her ready humor, her enthusiasm for the fine traits and potentialities she always found in friends and patients helped her to give strength to those who turned to her.

H. C. PATEY

News Notes

ANNUAL MEETING

The Association voted at the 1942 Annual Business Meeting that the decision as to time and place of the 1943 Annual Meeting should be placed in the hands of the incoming Board of Governors. Again, this year, restrictions imposed by war conditions have made it seem inadvisable to attempt to hold a professional conference. Therefore, the Board of Governors has voted to hold only the legally required annual business meeting on the afternoon of Wednesday, September 1, 1943, in the Chicago area, the exact place to be announced later. The Board of Governors hopes that all members who reside close enough to the place of meeting so that their travel will not constitute an added burden to the transportation facilities of the country will attend this meeting.

AMENDMENT

The Board of Governors submits the following amendment to the By-Laws of the Association: "Article III, Paragraph 1, shall be amended by the addition of the phrase 'Section E, Military Section' so that this paragraph shall read: 'The Sections of the Associations shall be: Section A, Clinical Section; Section B, Consulting Section; Section C, Educational Section; Section D, Industrial and Business Section; Section E, Military Section.' " This amendment, having here been published, will be presented for vote at the 1943 Annual Business Meeting.

1943 DIRECTORY, A.A.A.P.

The 1943 *Directory of Applied Psychologists*, Members of the American Association for Applied Psychology, Inc., has been mailed to members of the Association. This is the second edition of the directory. The revision was made by the Directory Committee consisting of H. B. English, H. A. Toops and C. M. Louttit, *chairman*. Members who have not received the directory, and others who may wish to purchase it, should communicate with the Executive Secretary of the American Association for Applied Psychology, Dr. Alice I. Bryan, 650 South Hall, Columbia University, New York City.

NOTICE OF CHANGE OF ADDRESS

Dr. Jerry W. Carter, director of the Wichita Guidance Center, has been elected to fill Dr. John G. Darley's unexpired term as Business and Circulation Manager of the Board of Editors of the American Association for Applied Psychology. Prompt delivery of the JOURNAL will be facilitated if subscribers who have changed their address will notify Dr. Carter. Communications should be addressed to him at the Wichita Guidance Center, 3422 East Douglas Avenue, Wichita, Kansas.

Failure to send notice of change of

address promptly is an inconvenience and an expense to the Association and delays delivery to the subscriber. Be sure to send the *same old address* to which the JOURNAL is being delivered as well as the new address where it should be sent. Type or print full name and address. A similar notice should be sent at the same time to the Office of the Executive Secretary, Dr. Alice I. Bryan, 650 South Hall, Columbia University, New York, N. Y. Owing to various demands related to the national war effort delivery of the JOURNAL on scheduled time may be interfered with, but efforts are being made so far as possible to maintain regular circulation dates.

INTERSOCIETY CONSTITUTIONAL CONVENTION

Twenty-six delegates from nine national psychological organizations met May 29-31 at the Hotel Pennsylvania in New York City to consider proposals for closer cooperation among existing societies in the furtherance of their scientific and professional aims during and after the war. This Intersociety Constitutional Convention was called by the Emergency Committee in Psychology of the National Research Council.

The convention was opened by Dr. Robert M. Yerkes, chairman of the Subcommittee on Survey and Planning, at whose suggestion the meeting was arranged. Officers elected by the convention were Edwin G. Boring, chairman; Alice I. Bryan, secretary; Ernest R. Hilgard, vice-chairman; Edna Heidbreder, vice-secretary. Organizations represented were the American Psychological Association, American Association for Applied Psychology, Society for the Psychological Study of Social Issues, Society of Experimental Psychologists, Psychometric Society, National Institute of Psychology, National Council of Women Psychologists, Department of Psychology of American Teachers Association and Section I of the American Association for the Advancement of Science.

At the close of the convention, a continuing committee under the chairmanship of Ernest R. Hilgard was appointed to complete the work of drawing up proposals for submission to the members of the participating societies. The other members of this committee are Gordon W. Allport, John E. Anderson, Edwin G. Boring, Alice I. Bryan and Edgar A. Doll. It was the sense of the convention that "the objectives in view can be most effectively and economically achieved through a closer and more organic tie between the reconstituted present national psychological societies and their present affiliates."

CALL FOR COOPERATION IN POST-WAR PLANNING RESEARCH

Dr. Gardner Murphy would like to secure the cooperation of all interested members of the A.A.A.P. in research projects now in progress under the auspices of the Society for Psychological Study of Social Issues. Specific studies of German culture, especially in the field of education, are most urgently needed. These should include studies of the school system and other means of public communication, with a view to making as clear as possible the channels of communication through which international thinking must flow, supplemented by suggestions as to most efficient means of utilizing these channels for international purposes. Definite knowledge is needed about German education in the pre-1914 era, in the Weimar period, and in the last ten years.

Second only in timeliness is the study

of American post-war hopes. *Any* data on projects of this nature are important. Dr. Murphy stresses the fact that now is the time to gather and send to Washington all memoranda dealing with the psychological basis of reeducation, especially in Axis lands. Washington agencies, including the State Department, have been outspoken with reference to this need, and psychologists, in spite of their criticism of the Government for inactivity in this sphere, have not come through with actual research memoranda which could be used in peace-planning. This is a great opportunity for us.

If you are interested in this type of study and, especially, if you have any data to report, please communicate directly with Dr. Gardner Murphy, College of the City of New York, New York, N. Y.

GENERAL

The New York State Association for Applied Psychology announces the following officers for 1943-44: President, Dorothea McCarthy, Ph.D. Fordham University; Vice-President, Morris Krugman, Ph.D., Bureau of Child Guidance of New York City; Secretary, Gladys Tallman, M.A., Neurological Institute, New York City; Treasurer, Joseph Zubin, Ph.D., Psychiatric Institute, New York City.

The Michigan Psychological Association has elected Miss Ruth M. Hubbard, Ph.D., of the Detroit Consultation Bureau, as president to succeed Dr. W. C. Olson.

Officers of the Metropolitan New York Association for Applied Psychology, 1933-44 are: President, F. K. Shuttleworth, Ph.D., College of the City of New York; Vice-President, Alice I. Bryan, Ph.D., Columbia University; Secretary-Treasurer, Gladys C. Schwesinger, Ph.D., Museum of Natural History.

The Board of Directors of the National Council of Women Psychologists announces the appointment of Kathryn Maxfield, Ph.D., to fill the office of vice-president for the period ending December 31, 1943. This office was left vacant by the recent death of Barbara S. Burks.

The Spring Meeting of the New Jersey Association of Psychologists was held at Trenton, May 7, 1943, at which time the following officers were elected: President, Dorothea M. Marston, B.A., Board of Education, Montclair; Vice-President, Gordon Lee Riley, M.A., Trenton State Hospital; Secretary-Treasurer, Edna E. Lamson, Ph.D., State Teachers College, Jersey City. This association now has one hundred members.

A joint meeting of the Wisconsin Association for Applied Psychology and the Milwaukee Psychological Club was held at Milwaukee, Wisconsin, May 14, 1943. Lieutenant Gordon Ellis spoke on "Army Classification." Officers of the Wisconsin Association for Applied Psychology for the year 1943-44 are: President, W. W. Biddle, Ph.D., Milwaukee State Teachers College; Vice-President, W. R. Duffey, Marquette University; Secretary-Treasurer, Gilbert J. Rich, Ph.D., Milwaukee County Guidance Clinic, Milwaukee, Wis.

The New Orleans Child Guidance Clinic will have an opening this fall for a psychological extern. This position will offer to an advanced student of

clinical psychology an opportunity to participate in the usual clinic activities with the added experience of taking part in community relationships through collaboration with a group work agency. Interested individuals should contact Miss Hazel Long, psychologist, The Guidance Center, 1737 Prytania Street, New Orleans, Louisiana.

Dr. Charles L. Odom was granted a leave of absence from his position as associate professor of psychology at Southwestern Louisiana Institute, Lafayette, Louisiana, to teach psychology at the George Peabody College for Teachers at Nashville, Tennessee, for the summer quarter.

Stephen Habbe, formerly psychologist at the National Training School for Boys, Washington, D. C., has joined the staff of the Life Insurance Sales Research Bureau in Hartford, Connecticut.

Steuart Henderson Britt, director of the Office of Psychological Personnel in Washington, D. C., has accepted a commission as lieutenant D-V (S) in the United States Naval Reserve. The Office of Psychological Personnel will continue its activities, and all communications relating to war service will receive prompt attention.

Terminating approximately eighteen years of service as director of the Department of Research at the Vineland Training School, Edgar A. Doll has accepted the position of director of Bonnie Brae Farm for Boys at Millington, N. J. He assumed his new duties July 1st. Dr. Doll has served as consulting psychologist at Bonnie Brae for the past seven years. He is also serving at the present time as expert consultant to the Secretary of War; as chairman of the Subcommittee on Mental Deficiency, Emergency Committee in Psychology, National Research Council; and as a member of the Subcommittee on Survey and Planning of the Emergency Committee.

The death of Dr. Barbara S. Burks occurred in New York City, May 24, 1943. She was forty years of age. For the past several months serious illness has curtailed her professional activities. She was a research associate of the National Research Council and she had been appointed to a Guggenheim Fellowship for continuing her investigations in heredity and environment during the coming year. In a letter published in the *New York Times* June 6, 1943 Professor Robert S. Woodworth of Columbia University paid tribute to her, as an outstanding member of the psychological profession.

BOOK REVIEWS

THE MENTAL GROWTH OF CHILDREN FROM TWO TO FOURTEEN YEARS: A STUDY OF THE PREDICTIVE VALUE OF THE MINNESOTA PRESCHOOL SCALES. By Florence L. Goodenough and Katharine M. Maurer. Minneapolis: University of Minnesota Press, 1942. Pp. xv + 130. $2.50.

This book is a report of researches in mental testing carried on at the University of Minnesota Institute of Child Welfare. Part I (45 pages) summarizes the historical background of tests for young children, and then describes briefly the Minnesota Preschool Scales. This description includes a statement about the sample on which the scales were standardized, and a list of the test items (with their sources), and the reasons for their retention in the final scale, with some discussion of discarded items. Chapter IV, "Derivation of the Scale Values," prepared by M. J. Van Wagenen, describes the methods of obtaining *C*-score values and I.Q.-Equivalents, the reliability of the scales, and the relation of the test scores to socio-economic status. There are two equivalent forms, *A* and *B*, and each of these is divided into a verbal and a nonverbal scale. Reliabilities are satisfactory: for the total scales r's between forms *A* and *B* range from .85 to .92 for the nine age-groups from 1½ through 5½ years.

In Part II (67 pages) scores on the Minnesota scales are compared with retests on the same scale after elapsed intervals of one and two years, and with retests at various intervals on other scales: the Merrill-Palmer, both revisions of the Stanford-Binet, the Arthur Point Scale, and the American Council on Education College Entrance Examinations.

Correlations between tests increase with increasing age at the time of first testing. However the tendency (reported by others) for r's to decrease with increasing intervals between tests was found for some tests but not consistently. The Merrill-Palmer test showed the lowest relation to the Minnesota, all r's being positive but low. Correlations with the Arthur scale are somewhat higher, but still lower than with the Stanford-Binet. In neither Merrill-Palmer nor Arthur scales is there any consistent change in the correlation as the interval between tests increases. This lack of agreement with other studies is puzzling. However, the authors do not make clear to what extent the same cases enter into the r's between different tests at different ages, nor whether the number of previous tests per child has been controlled in the r's for prediction. If the cases used in each r are in large part different, or have unequal amounts of testing experience, then the failure to get consistently decreasing r's with increasing intervals between tests may be due, at least to some extent, to these variations in the sample.

Correlations between Minnesota Preschool Scales given before 6 years, and the A.C.E. tests given at 15 to 18 years are positive but quite low—the highest r is .42 between the A.C.E. and the nonverbal scores for the 5-year-olds, while the r with tests given before 4 years is only .12.

In practically all comparisons the nonverbal scale of both forms, though shorter and therefore less reliable, was found to be a little more closely related to all later tests than were either the verbal or total scale scores. This result has led the authors to a new inquiry in which they plan to construct a scale designed to have greater predictive value. Correlation with terminal test status will be their determining criterion for selection of preschool test items. Furthermore, because of consistent differences in the children in verbal and nonverbal ability, the authors have come to the conclusion that there may be greater consistency in patterns of specialized mental abilities than in total test scores relative to group norms.

Sex differences in stability of mental growth are indicated in the comparisons of retest r's of girls with those of boys. Prediction of scores was better for the girls in tests given under 4 years of age, but equal or better for boys after this age. It is suggested that girls, being faster-maturing, become stable in their rates of maturing earlier than do boys.

Individual case studies illustrate different types of growth curves which show characteristic deviations from the group trends, and comparisons between verbal and nonverbal scores.

An appendix gives tables for converting Merrill-Palmer scores to I.Q.-Equivalents. There is a bibliography and an index.

This book makes an important contribution to our knowledge of the values and limitations of several widely used intelligence tests. In general the authors' results from repeated tests of the same children corroborate those of other studies which have shown low predictability of later intelligence from preschool tests. They further point to the areas in which prediction may be improved, and indicate fields for valuable future research on the processes of mental growth.

NANCY BAYLEY
INSTITUTE OF CHILD WELFARE
UNIVERSITY OF CALIFORNIA

INDUSTRIAL PSYCHOLOGY. By Joseph Tiffin. New York: Prentice-Hall, 1942. Pp. xvi + 386. $4.65 (College Edition, $3.50).

The book deals with the whole field of industrial psychology—selection of employees and promotion of industrial efficiency. It is suitable for students with some background in psychology and statistics. It is reasonably satisfactory for the general reader except for certain places where the discussion becomes technical, especially from a statistical standpoint.

The initial presentation of individual differences with distribution curves for industrial production or test scores leads into extensive discussion of psychological tests with a commendable emphasis on placement rather than selection exclusively. There is a brief statement of validity, reliability, critical scores and weighting of the tests. The interpretation of test validity follows the most up-to-date practice, namely, the prediction tables derived by Taylor and Russell. These tables are given in detail in the appendix. The author wisely emphasizes the attitude and personality of the tester or industrial psychologist.

Several chapters describe various employment tests, giving validity in many cases. This section is well annotated. The discussion of personality tests, however, is rather meager. It is unfortunate that considerable space is given to one such test that is somewhat in disrepute. It would be well to indicate some of the trends in the development of more objective tests in this field, even though they are still pretty much in the experimental stage.

"Visual Problems of Industry" are discussed in a long chapter. It describes some commercial apparatus and presents various studies of industrial production as related to visual tests, such as, acuity or stereovision. It is not always clear whether the tests discussed are applied when the subject already has his vision corrected or whether they take him without glasses. Toward the end of the chapter there is commendable emphasis on getting professional help where it is needed. The reader gets somewhat the impression that a man might be rejected for a job on visual grounds although, with adequate correction, he could do the job perfectly well. Furthermore, *lighting* is given only casual mention. The content of the chapter is entirely sound but seems somewhat out of proportion to the rest of the book.

The chapter on *training* gives various learning curves showing the effect of training on production. With reference to foremen, there is a list of suggested topics for a foremen's course and a rather interesting test which might be used to check on the results of such a course. This test involves detailed case studies or descriptions of supervisory situations with questions as to what should be done.

The chapter on *fatigue* misses the difference between production curves for a fatiguing job and a monotonous one. There is a very brief treatment of illumination, ventilation, and noise, which overlooks some rather significant literature on the last of these. Rest pauses, and motion studies are mentioned, but this chapter, in view of the tremendous amount of material available, is little more than an outline.

There is a helpful list of items used by numerous companies in *merit rating systems* with indications of the comparative weight of the different items. A typical blank is presented. Caution against the halo effect is given. It is interesting to note that factor analysis may be applied to industrial merit rating. There is emphasis on the necessity of avoiding errors due to different jobs, age or length of service. The discussion includes some technical points that are applicable to the procedure of rating in general. It would be well to point out that these same procedures and principles are equally applicable to employment purposes.

The chapter on *industrial inspection* is one that is not ordinarily found in such books and is of special interest. It deals with methods of scoring the inspector's job, both on speed and accuracy and the use of various tests for selecting inspectors along the lines discussed in the earlier chapters. Motion study of the way

inspectors handled the tin plates which they were inspecting proved helpful in subsequent training of inspectors.

The chapter on *accidents* presents some new data on accident proneness and goes to considerable length to establish the importance of this tendency. It is then discussed in terms of age, length of service and particularly emotional factors. A brief test of emotional maturity is suggested. Some of the efforts at locating accident-prone individuals by tests are recounted.

The book concludes with *attitudes and morale*. There is a good discussion of the development of attitude scales for measuring morale. Various factors affecting morale are mentioned briefly, such as supervision, working conditions and wages. Conspicuous by its absence is the very interesting morale work done at the Hawthorne Plant of the Western Electric Company.

The appendix discusses elementary statistical procedures, includes the detailed Taylor-Russell tables for interpreting test validity and lists publishers of a considerable number of tests. The tables should be particularly helpful to industrial psychologists who are not fortunate enough to have a reprint from the *Journal of Applied Psychology*.

Practically, the reviewer's only adverse criticism is in the matter of emphasis. The author, like most of us when we have done original work of our own which fits into the discussion, is inclined to present the findings in considerable detail. Tiffin seems to lean in this direction a little more than the average. The discussion of visual problems, industrial inspection and accident proneness are cases in point. However, it is worth while to have this material available in the literature, although it does somewhat distort the balance of the book. Places where more complete treatment would be desirable are personality tests, fatigue, monotony, illumination and morale. It is difficult to cover adequately the whole field of industrial psychology in a book of 329 pages exclusive of the appendix. Obviously, it was necessary to touch some problems pretty lightly and no two writers would agree on the exact emphasis.

The general treatment is systematic, well annotated, well illustrated with diagrams and tables and the style is straightforward and to the point. Teachers of industrial psychology courses can supplement the thinner portions by additional material. The general reader will certainly carry away the impression that industrial psychology is a scientific field which needs no apology and which is already contributing materially to increased efficiency.

HAROLD E. BURTT
OHIO STATE UNIVERSITY

APPRAISING AND RECORDING STUDENT PROGRESS. By E. R. Smith, R. W. Tyler, and the Evaluation Staff. Vol. III, Adventure in American Education. New York: Harper & Bros., 1942. Pp. xxiii + 537. Price, $3.00.

The greater part of this volume—four hundred pages—constitutes a progress report on the great variety of educational and psychological tests and other instruments of appraisal developed by the Evaluation Staff in the Eight-Year Study of the Thirty Schools Experiment sponsored by the Commission on the Relation of School and College of the Progressive Education Association. These instruments were prepared to aid the thirty participating secondary schools in determining the extent to which they have achieved their avowed objectives.

The psychoeducational techniques described include so many fresh and promising approaches to the analysis of personality development, approaches based on careful thought proceeding from profound understanding of developmental psychology, that the volume merits the thorough study of all professional psychologists. It will be particularly valuable to test constructors.

The fundamental premise of this evaluation program is that "the essential characteristic of human behavior is its organic unity" and that "no single type of growth can be fully achieved without some progress in all others." Democratic attitudes are conceived as an integral factor in a sound personality pattern. Development of wholesome interests is taken as an educational objective. Objective, self-respecting, constructive activity, rather than conformity, is the goal of personal-social adjustments. The design for appraisal is consequently comprehensive in scope, giving some attention to all observable aspects of mental and emotional development and their interrelations. In all tests the problems parallel or reproduce the essential features of complex mental reactions in functional situations.

Applied psychologists, especially those in education, will be challenged by the attempt to appraise the ability of adolescents to apply advanced techniques of thinking. Distinctions between intelligence and achievement tend to disappear in tests of what may be called "applied intelligence." These tests have been designed to reveal ability to interpret data, to apply principles of science in specific situations, to judge what conclusions follow from particular assumptions and by what principles they follow, to locate and appraise the basic assumptions on which particular proofs depend, to apply democratic beliefs consistently and objectively to a variety of social problems, to apply facts and generalizations to social problems, to appreciate basic similarities in works of art by the same artist. In all instances they yield results that may be broken down in a variety of ways to provide qualitative descriptions of a student's ways of thinking. By ordinary standards of measurement most of the tests are unreliable, but "appraising student progress" is here conceived as a qualitative task.

A questionnaire of one hundred items was developed to appraise the depth and variety of wholesome adolescent interests in several areas associated with general curriculum divisions, sports, and two classifications cutting across curriculum boundaries, "reading" and "manipulative." Two other two-hundred-item questionnaires were devised to explore the reactions of a student to himself as a personality, to other human personalities, and to the realities of life. Some might wish the writers had not used the term "projective technique" to describe their use of this instrument to infer the way their subjects' "personalities organize experience," but the interpretations are sufficiently qualitative to justify the term clinical to characterize the approach.

Despite the variety of well-adapted instruments, the observational techniques Tyler has developed elsewhere and recommends as basic to appraisal of many behaviors are given no place in the account. Health habits and physical development in general are omitted from appraisal.

Approximately fifty pages are devoted to record blanks designed primarily for case study, but also for transferring information to other institutions and to parents. An excellent concise statement of the philosophy and objectives of record-keeping is given.

The appraisers have recognized more clearly than many the psychological effects of testing programs on adolescents. Appraisal by tests was held to the purpose of guiding students. Much testing was placed at the beginning rather than at the end of instructional activities. Comparisons, norms and ratings were avoided and behavior descriptions, in varying degrees of quantification were substituted.

The thirty schools were not typical in that they serve an elite. Even the ten public high schools were hardly representative of public schools. Nevertheless, psychologists in school systems that have strong testing and guidance programs may well encourage use of the instruments and practices of appraisal described in this report. They should welcome these materials as a means of furthering through schools the guidance of personality devlopment in adolescents.

WARREN G. FINDLEY
NEW YORK STATE EDUCATION DEPARTMENT

AMERICAN ASSOCIATION FOR APPLIED PSYCHOLOGY, INC.

The object of this Association is the promotion and development of the service which psychology as a science can render society in its application in business, education, industry, law, medicine, mental hygiene, social welfare and related fields. To that end it is concerned with the development of psychological service and practice at a high level, with the encouragement and facilitation of research, and with the promotion of high professional and ethical standards. Its particular business shall be: the definition of professional and ethical standards, the improvement of training facilities in applied psychology, the conduct of meetings for the interchange of information among its members, the issuance of publications for both its members and the general public, the furtherance of cooperation with non-psychological groups, the development of new professional opportunities, and the transaction of such other business as is consistent with its primary purposes or is authorized by its Articles of Incorporation or its By-Laws.

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